



Application No. 10/517,014

Amendment

Reply to Office Action of January 20, 2006

PATENT

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (currently amended): Apparatus for processing thermoplastic synthetic material that has to be recycled, comprising a first and a second receptacle (1, 2) for the material to be processed, in which receptacles (1, 2) tools (21) circulating around vertical axes are provided for mixing and heating the material, wherein at least two tools (21) each circulate in different levels one above the other, and the material reaches the second receptacle (2) that is connected to an evacuating means (9) from the first receptacle (1) through a connecting conduit (3), and wherein the first receptacle (1) has ~~above~~ an intake opening (19) for the material to be processed, which opening is disposed at a higher level ~~then the~~ than highest tools (21) circulating within this receptacle (1), and a discharge opening (49) of the second receptacle (2) is disposed at least substantially at the level of the lowermost tools (21) circulating in this receptacle (2), and the a mouth of the connecting conduit (3) in the second receptacle (2) is disposed at a higher level than the tools (21) circulating in this receptacle (2), and wherein the processed material is carried off the second receptacle (2) through the discharge opening (49) by means of at least one screw (47), whereby this receptacle (2) is vacuum-tightly closed, and the first receptacle (1) is also connected to an evacuating means (9), ~~characterized in that~~ wherein to the intake opening (19) of the first receptacle (1) a sluice (6) is connected and ~~that~~ wherein in both receptacles (1, 2) the tools (21) are mounted on disc-shaped tool carriers (22) disposed one above the other, and ~~that~~ wherein in each one of the two receptacles (1, 2) at least one temperature sensor (32) is provided for each level of the circulating tools (21), which sensor is disposed higher than the level associated to it.

Claim 2 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein the evacuating means (9) is equipped for creating different vacuum conditions in the two receptacles (1, 2) and a transfer sluice (56) is disposed in the connecting conduit (3).

Claim 3 (currently amended): Apparatus according to claim 2, ~~characterised in that~~ wherein the evacuating means (9) comprises at least one vacuum pump (14, 44) for each one of the receptacles (1, 2).

Claim 4 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein a control means (16, 46) for the vacuum within the respective receptacle (1, 2) is connected to each one of the receptacles (1, 2), which control means adjustably controls the vacuum in the respective receptacle (1, 2).

Claim 5 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein on at least one of the tool carriers (22) the disc edge (65) is upwardly bent like a plate.

Claim 6 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein the temperature sensors (32) are connected to means (34, 41) for controlling the circulation of the tools (21).

Claim 7 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein each one of the evacuating means (9) comprises a dust separator (66).

Claim 8 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein the screw (47) constitutes a member of an extruder (62).

Claim 9 (currently amended): Apparatus according to claim 8, ~~characterised in that~~ wherein a double screw extruder is connected to the discharge opening (49).

Claim 10 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein to the discharge opening (40) a housing (48) of the screw (47) is connected, which housing comprises at least one de-gassing opening (52) ~~to which preferably a vacuum pump (54) is connected.~~

Claim 11 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein each temperature sensor (32) is disposed within the receptacle (1, 2) at least

substantially at a level that is in the region in which ~~the~~ a mixing cone (30) leaves the ~~sidewall~~ (31) side wall of the receptacle (1, 2).

Claim 12 (currently amended): Apparatus according to claim 1, ~~characterised in that~~ wherein the sluice (6 ~~or~~ 56) is a vacuum sluice.

Claim 13 (canceled)

Claim 14 (new): Apparatus according to claim 1 wherein the at least two tools circulate in different levels one above the other in the first and second receptacles.

Claim 15 (new): Apparatus according to claim 1 wherein the mouth of the connecting conduit in the second receptacle is disposed at a higher level than an uppermost tool in the second receptacle.

Claim 16 (new): Apparatus according to claim 10 including a vacuum pump connected to the degassing opening.